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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *14 November 2007*.

2a)☒ This action is **FINAL**.   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-22* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-22* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

SAM RIMELL
PRIMARY EXAMINER

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application

6)☐ Other: _____.

DETAILED ACTION

1. Claims 1-22 have been examined.

Response to Arguments

Applicant's arguments with respect to claims 1-13 have been considered but are not persuasive.

I. Applicant's first argument is that there was no motivation to combine the references and that "the office does not state why one skilled in the art would look to dognanksoy to modify the combination of Bloom and AAPA." (Response pp. 7-8). However, the prior office action stated, "Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to include this feature, to speed up processing by eliminating the processing of algorithms not configured to meet the goals[,]" and "Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to include this feature in order to make the best matches readily identifiable to the user."

II. With regards to applicant's argument that the rejection was piecemeal, the applicant provides no support or bases for the claim. It can only be assumed be the examiner that the applicant is contesting the assigning of weights for the properties in Doganaksoy is not equivalent the assigning of a weight to goals. However, to aid applicant and prevent further misunderstanding by applicant of the use of the Doganaksoy reference Para 30 shows the assignment of the weights to the properties is to emphasize or de-emphasize the goals.

III. With regards to one of ordinary skill in the art looking to the Dognaksoy reference. Dognaksoy and the other cited references are searching technologies. For which Dognaksoy

provides a method for searching for something having a desired set of goals, and the prior art

teaches looking for something having a desired set of goals. MPEP 2141 States:

> "Office personnel should continue to follow the general search guidelines set forth in
>
> MPEP § 904 to § 904.03 regarding search of the prior art. Office personnel are
>
> reminded that, for purposes of 35 U.S.C. 103, prior art can be either in the field of
>
> applicant's endeavor or be reasonably pertinent to the particular problem with which the
>
> applicant was concerned. Furthermore, prior art that is in a field of endeavor other than
>
> that of the applicant (as noted by the Court in KSR, "[w]hen a work is available in one
>
> field of endeavor, design incentives and other market forces can prompt variations of it,
>
> either in the same field or a different one", 550 U.S. at ___, 82 USPQ2d at 1396
>
> (emphasis added)), or solves a problem which is different from that which the applicant
>
> was trying to solve, may also be considered for the purposes of 35 U.S.C. 103."

In this case the problem to be solved is how to find the best object given a desired set of goals,

which is solved by Dognalsoy.

IV. Applicants next allege the limitation "assigning a weight to each goal in a set

of goals for the data mining algorithm" is not taught. Applicant incorrectly asserts that this

limitation relied solely on the teaching of Doganaksoy to teach this limitation, as it would have

been impossible for the examiner to rely upon anything in the prior office action to teach this

limitation in the prior office action as it has been newly amended. However, the flaw in

applicants argument is that applicant provided a piecemeal analysis of the references and only

argues each reference separately instead of considering their combination. One cannot show

nonobviousness by attacking references individually where the rejections are based on

combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). Bloom and The AAPA clearly teach Data mining algorithms having a set of goals, and Doganaksoy teaches a method of searching for the best product given a desired set of goals using weight to quickly provide the user with the best product.

V. Applicant next asserts that the limitation of calculating a performance value for the data mining algorithm based on the set of weights assigned to a set of goals and a set of results for applying step. Applicant provides no explanation as to why the cited references do not teach the claimed limitation other them making a mere general allegation. Bloom does teach calculating a figure of merit for the data-mining algorithm that is created by a weighted expression of the percentage of false negative to the percentage of false positives. Bloom, 104. To get these percentages includes the number of correct positives and thus is based on the results of running the mining algorithm. Secondly, the percentages are also goals using the broadest reasonable interpretation. *See,* Bloom 104.

VI. With regard to claim 2, applicant's arguments are not persuasive as this limitation is taught as explained in the amended rejection below.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person

having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims1-8 and 10-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 2003/0212678, known hereafter as Bloom in view the applicant admitted prior art, and US 2004/0083083 known hereafter as Doganaksoy.

2. Claims are rejected under 35 U.S.C. 103(a) as being clearly anticipated by.

2.1. Claim 1 is anticipated as follows:

obtaining a set of goals for the data mining algorithm;(This is taught by Bloom Para 15 and 99-102, In the applicant admitted prior art, para 3 of applicants specification, and Doganaksoy para 9 teaches obtaining goals but is silent with regard to data mining algoritms),

the data mining algorithm being configured to solve the set of goals (Bloom and Doganaksoy do not expressly disclose this limitation; however, it is admitted by the applicant in para 3 of applicants specification

> user is seeking to accomplish (e.g., classification, fraud detection, etc.). Making such a selection
> is relatively straightforward since each data mining algorithm is generally configured to fulfill
> specific goals. However, multiple data mining algorithms may be configured to fulfill the same
> goals. As a result, it is desired to select the best performing data mining algorithm for the
> particular data that is being mined.

Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to include this feature, to speed up processing by eliminating the processing of algorithms not configured to meet the goals.)

assigning a weight to each goal in the set of goals for a data mining algorithm; (Bloom

recognizes the use of weights in paras 102-104) and Bloom and the admitted prior art teach

having a set of goals for a data mining algorithm, but does not expressly disclose the use of a

weight for each of a set of goals, this feature is taught however in Doganaksoy Para 6

"Furthermore, properties having higher priorities can be given

greater weight than properties having lower priorities when

the overall match score of the experimental run or new

material is being calculated. Embodiments of the systems and

methods of this invention can allow materials to be ranked in

descending order according to their calculated overall match

score, so that the material(s) that best matches the desired

properties is readily identifiable by a user." Thus, it would have

been obvious to one of ordinary skill in the art at the time of the invention to include this

feature in order to make the best matches readily identifiable to the user)

applying the data mining algorithm to a dataset; (Bloom Para 15, the number of correct

positive can only be determined after applying the data mining algorithm to the dataset)

and calculating a performance value for the data mining algorithm based on the set of

weights and a set of results for the applying step. (Bloom Para 15 FOM and Doganaksoy para

6 as shown above) and storing the performance value for use in evaluating a data mining

algorithm(Bloom figure 2)

2.2. Claim 2 is anticipated as follows:

identifying a set of error cases for a goal in the set of goals, each error case corresponding to

a possible incorrect result in fulfilling the goal (Bloom Para 15, positive and negative relative

accuracies, Doganaksoy Para 10 A figure of merit is a goal using the broadest reasonable

interpretation, for which one could have assigned a weight based on its importance to the

user in Doganaksoy, the figure of merit itself is comprised of two error cases false positive

and false negatives and has a weighted relationship and taught in Bloom Para 104)

and assigning a weight to each error case in the set of error cases. (Bloom Figure 15 shows

that the each error case has a different weighting factor assigned, the positive relative

accuracy weight being $W/(W+1)$ and the negative relative accuracy weight being $1/(W+1)$

Doganaksoy Para 11)

2.3. Claim 3 is anticipated as follows:

obtaining an acceptability for an error case; and calculating the weight based on the

acceptability. (Bloom Para 16, cost is an acceptability using the broadest reasonable

interpretation) (Doganaksoy Para 9)

2.4. Claim 4 is anticipated as follows:

determining an error rate for each error case based on the set of results; (Para 15 the

relative accuracies are error rates using the broadest reasonable interpretation) and

calculating an error vector for each error case based on the error rate and error weight for

the error case.(Para 15 and Para 95 FOM equation shows the calculation of both error

vectors, it is also noted that the examiner believes that the prior art contains a

typographical error and that (number_of_correct_ positives)/ (number_of_actual_

negatives) should be (number_of_correct_ negatives)/ (number_of_actual_ negatives))

2.5. Claim 5 is anticipated as follows:

the calculating step further includes summing the error vectors for the set of error cases to

obtain the performance value. (Para 15 FOM)

2.6. Claim 6 is anticipated as follows:

6. The method of claim 1, further comprising comparing the performance value to an

acceptable performance value. (Para 105 shows comparing all of the performance

values, one of which is the acceptable or best performance value)

2.7. Claim 7 is anticipated as follows:

7. A method of evaluating a set of data mining algorithms, the method comprising:

selecting the set of data mining algorithms; (Paras 7 or 9) the rest of the limitations are

taught as shown in the rejection of claim 1.

2.8. Claim 8 is anticipated as follows:

8. The method of claim 7, wherein the selecting step is based on the set of goals. (Para 8)

2.9. As per claim 10, See Claim 1 rejection and Doganaksoy para 6.

2.10.   Claim 11 is anticipated as follows:

11. The method of claim 7, wherein the assigning step includes: identifying a set of error

cases for each goal; and assigning a weight to each error case in the set of error cases.

(See claim 2 rejection)

2.11.   Claim 12 is anticipated as follows:

12. The method of claim 7, wherein the set of data mining algorithms includes at least one

data mining algorithm having a first set of parameter values and the at least one data mining

algorithm having a second set of parameter values. (Para 6)

2.12.   Claim 13 is anticipated as follows:

13. The method of claim 7, further comprising: selecting a data mining algorithm in the

set of data mining algorithms; and generating a data mining model based on the selected

data mining algorithm. (Para 6)

2.13.   As per claim 14, see claim 1 rejection and para 169.

2.14.   As per claim 15 see claim 7 rejection.

2.15.   As per claim 16 see claim 10 rejection.

2.16.   As per claim 17, this limitation is taught in Bloom Para 162, which teaches output

to a monitor.

2.17.   As per claim 28 this limitation is taught in Bloom para 7.

2.18.   As per claim 19 this limitation is taught in Bloom para 166.

2.19.   As per claim 20 see claim 1 rejection.

2.20.   As per claim 21 see claim 7 rejection.

2.21.   As per claim 22 see claim 10 rejection.

Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over US 2003/0212678, known hereafter as Bloom in view the applicant admitted prior art, and US 2004/0083083 known hereafter as Doganaksoy in further view of US 20020147599, known hereafter as Vishnubhotla.

Bloom teaches business taxonomies and problems in paras 4 and 5 however bloom fails to

expressly disclose

selecting a business taxonomy;

selecting a business problem based on the business taxonomy; and

selecting the set of data mining algorithms based on the business problem.

However, These limitations are taught in Vishnubhotla paras 10-14 and thus would have been

obvious to one of ordinary skill in the art at the time of the invention to include this feature to

quickly locate algorithms for solving a problem.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time

policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action. In the event a first reply is filed within TWO

MONTHS of the mailing date of this final action and the advisory action is not mailed until after

the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Cory C. Bell whose telephone number is (571) 272 2736. The examiner can normally be reached on m-f 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Charles Rones can be reached on (571) 272 4085. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

SAM RIMELL
PRIMARY EXAMINER